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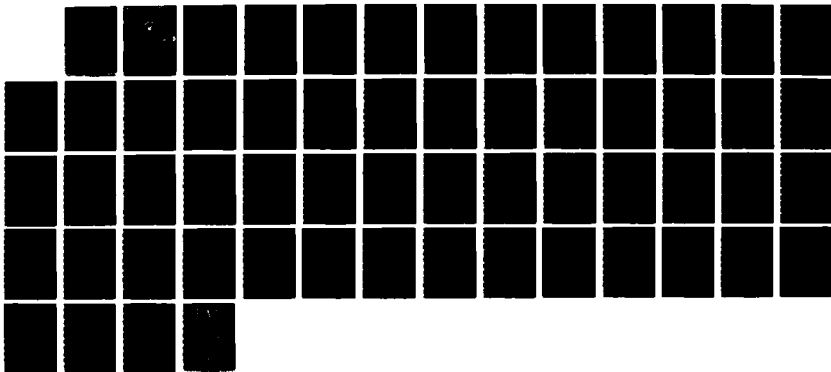
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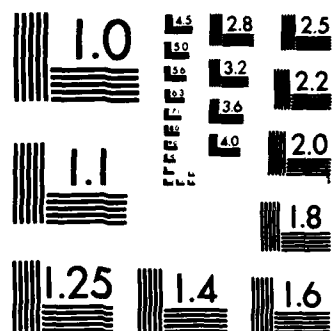
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THESIS

CNET PROGRAM AUTOMATED TRACKING SYSTEM
(CPATS)
A COMPREHENSIVE STUDY

by

Mary Edith Williams

June 1987

Thesis Advisor

J.M. Fremgen

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CNET Program Automated Tracking System
(CPATS)
A Comprehensive Study

by

Mary Edith Williams
Lieutenant, United States Navy
B.S., Appalachian State University, 1978

Submitted in partial fulfillment of the
requirements for the degree of

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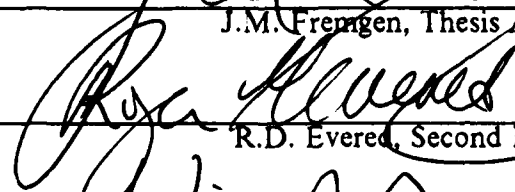
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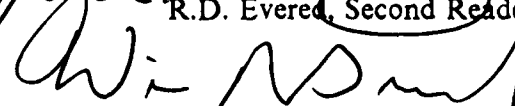
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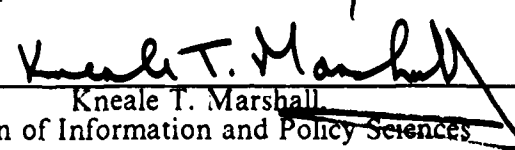

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ABSTRACT

The purpose of this thesis is to conduct a comprehensive analysis of the Chief of Naval Education and Training Program Automated Tracking System (CPATS) and its impact at the operational level. The methodology used involved reviews of the history, implementation and applications of the system and its benefits and costs in terms of information and funding. The results indicate that CPATS has the potential for improving the quality and the timeliness of important management information. Much of this potential has already been realized at CNET headquarters and in liaison with training sponsors. The full potential has not yet been realized at the field level, and recommendations toward that end are made herein. The study also indicated that the initial costs of implementing CPATS will be recovered with less than a full year's operating cost savings.

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I. INTRODUCTION

A. OVERVIEW

The CNET Program Automated Tracking System (CPATS) was originally designed in 1983 by the Information Systems Department, MINI Computer Support Group of the Management Information and Instructional Systems Activity (MIISA), Pensacola, Florida, at the request of the Chief of Naval Education and Training (CNET). The CPATS project was envisioned to be a "cradle-to-grave" resource (manpower and dollars) tracking system from the initiation of the Program Objective Memorandum (POM) to budget execution within the CNET claimancy.

The automated data processing (ADP) support for CPATS involves software development as well as hardware coordination. The software development has been accomplished in two phases. The first phase was the Initial Budget Call Module to support the "budget call" portion of the CPATS project. This module became effective in early FY85 by collection of data at three levels:

- 1) Operating Budget Unit Identification Code (OB-UIC), Activity Group (AG), Subactivity Group (SAG), Cost Account Code (CAC), Expense Element (EE) level for Operation and Maintenance, Navy (O&MN) dollar entries
- 2) OB-UIC, AG, SAG, Cost Account level for Billet entries
- 3) OB-UIC, AG, SAG, Cost Account, Contract Number level for Contract Exhibit entries

The second phase is a module being developed to facilitate CNET's data collection as it pertains to development of the CNET budget. This module should prove to be most effective in its summary techniques for grouping cost accounts by program. [Ref. 1: p. 2]

B. OBJECTIVES

The purpose of this thesis is to review CPATS from October 1985 to March 1987 and determine to what extent the benefits of enhanced management information justify the costs of implementation. Special emphasis will be on any enhancements or degradation realized at the operational level. Additionally, a general analysis will be conducted to evaluate the contention that CPATS will provide more timely and accurate data for POM development, Comptroller of the Navy (NAVCOMPT) budget submissions, Program Sponsor requirements and funding execution.

C. RESEARCH METHODOLOGY

The information contained in this thesis was extracted from the CPATS User's Manual, interviews and correspondence within CNET. Interviews were conducted through both telephone conversations and site visits. The information presented is made up of both facts and subjective observations.

The frame of reference throughout the study is confined to a specific operational activity and its particular chain of command leading to CNET. The activity chosen is Commander, Naval Training Center, San Diego (COMNTC-SD), a fourth echelon command reporting to the Chief of Naval Technical Training (CNTT), who is a third echelon command reporting directly to CNET. Although CPATS impacts all commands within the CNET community, the desire for consistency of information and procedures has led to the focus on a single operating activity.

D. ORGANIZATION OF THE STUDY

This research effort is organized into six chapters. Chapter I is an introduction presenting an overview, objectives and the research methodology of the study. Chapter II presents the goals and definition of CPATS along with the interface with the Department of Defense Planning, Programming and Budgeting System. Chapter III reviews the history and organizational development of CPATS and changes that took place. This chapter will also discuss the reorganization of CNET staff and its impact on the CPATS project. Chapter IV contains observations and findings from the headquarters perspective. A key objective in this chapter is to determine whether information received from lower levels is more accurate and meaningful for POM and budget development. Chapter V presents observations and findings at the activity level. A key objective is to investigate concerns about the implementation process of CPATS. Chapter VI discusses the results of the cost-benefit analysis. Chapter VII presents the final conclusions made by the author and recommendations for system improvements.

Appendix A provides a glossary of Navy acronyms and terms used throughout this study.

II. GOALS, DEFINITION AND PPBS INTERFACE

A. GOALS AND DEFINITION

1. Problems Identified and Goals Set

In the summer of 1983 CNET established a task force for the purpose of conducting a six month study of what was soon to become CPATS. Early in the study it became apparent to members of the task force that there was no real linking of CNET financial information to the Department of Defense (DOD) Planning, Programming and Budgeting System (PPBS).

The DOD budgeting process includes both an appropriation format and a program format. The appropriation format is for authorization and obligation of funds. This format is concerned with the input of resources. The intended output is presented in program format. The program budget outlines what accomplishments can be expected from the resources made available by appropriations. A building block of the Program Budget is the Program Element (PE). A PE is normally an aggregation of forces, manpower and costs associated with an organization, function or project. The PE's can be subdivided into more specific levels or aggregated to describe different relationships. They can be grouped in one way for programming purposes, another way for budget reviews and still another way for management information.

The current data in 1983, required by the Office of the Secretary of Defense (OSD) and NAVCOMPT, were in the form of Activity Groups (AG's), Subactivity Groups (SAG's), Cost Account Codes (CAC's) and Expense Elements (EE's). These data were in appropriation format, required by the Integrated Disbursing and Accounting Financial Management System (IDAFMS) and used for tracking of funds through execution. Although vital to authorizations and obligation accounting, this information was not useful in the decision making process of program budgeting. For program budgeting, data are needed in terms of PE's that can be aggregated into program decision packages. The task force also noted that the limited time frames and the method of adjustments in PPBS, particularly in the budgeting phase, did not allow a reasonable approach to assigning adjustments to programs in execution. In a discussion of cuts marks during the budget process, the task force made the following observations:

During the budget process, the majority of cuts/marks ... during the allocation process are non-specific to "programs". This non-specific nature precludes valid assignment of that portion of the cuts to a "program" or other management entity. The impact on valid planning and programming of non-specific cuts/marks is well known. Various warfare sponsors desire, and indeed have a right to know, the budget status of their areas of interest. Additionally, since the timing of the reclama cycle is short, "program" status as a result of cuts/marks becomes more critical. The wide variety of interested "program" managers and their respective wide geographical dispersement precludes a coordinated assignment of cuts/marks in the time frame available. [Ref. 2: p. II-5]

These initial judgements by the CPATS group were presented to CNET in August 1983 along with the following specific recommendations. [Ref. 3: encl. 16]

- 1) Utilize the Cost Account Code (CAC) structures, already in existence, as the common denominator in an attempt to link the various phases of PPBS.
- 2) Develop a set of "program" packages that would provide a basis for identification of resources along programmatic lines.
- 3) Develop a method of assigning non-specific adjustments received in the review process. That method must be understood by all echelons of command, be as fair as possible, capable of being used in rapid order and reflect special adjustments.

These recommendations were approved by CNET and briefed to functional flag officers within the CNET community, NAVCOMPT and Program Sponsors. They became the primary goals of CPATS.

Before the implementation of CPATS, the ability to monitor resources "cradle-to-grave" at the program level was nonexistent. The programs identified in the POM process could not be monitored individually through the budgeting and execution phases. If the matching of appropriation format to budgeting format could be made effectively and efficiently, CNET could optimize its performance in the PPBS and thereby gain sufficient resources for the execution of its mission.

2. CPATS Defined

The primary characteristic of CPATS, and its greatest advantage, is the automated capability to track resources provided by sponsors through the PPBS process to the final execution of programs at the lowest levels. This process is made possible by the assignment of specific Program Management Codes (PGM's) for each function within each activity throughout CNET. These PGM's were assigned and are maintained by CNET Program Managers. The common denominator used to facilitate the tracking of program data is the Cost Account Code (CAC). The Resource

Management System (RMS) uses CAC's to capture actual expenditures within the Navy's cost accounting system. Relating the cost accounts to CPATS programs through the use of PGM's has enabled CNET to complete the "cradle-to-grave" tracking cycle.

CPATS works from a Master Dictionary of RMS cost data (OB-UIC, AG, SAG, CAC, EE) already in use and related CPATS program data describing the sponsor and program to which they relate. It is an incremental budgeting system using a base year of FY85. Using expenditure data from FY85 and subsequent years, programming and budgeting are accomplished through additions, deletions or changes to the previous year's base. Because the system is automated and dynamic, data can be compiled or sorted by any data field, depending on the management information needed. The result is that CNET is now able to allocate resources received from sponsors for specific program objectives and, without losing their identity, determine by program the extent to which resources are being used. Likewise, any shortfalls that exist can be compensated for by the appropriate OPNAV sponsors.

B. PPBS INTERFACE--THE ANNUAL CYCLE

1. Planning

The Planning, Programming and Budgeting System (PPBS) is the resource vehicle used by the Office of the Secretary of Defense (OSD) to support the mission of national defense. It is divided into three phases. The first phase is planning. During this phase the resource sponsors within OPNAV (CNO) define a threat and then plan a strategy to meet that threat. The role of CNET in this process is to work with resource sponsors to develop Navy Training Plans (NTP's), Navy Accession Plans or other plans as necessary to support different strategies. This process is ongoing and plans are made for seven to twenty years in the future. There are generally no numbers considered in this phase of PPBS, but certainly program aggregations are considered.

2. Programming

During the programming phase of PPBS, plans are translated into programs made up of manpower, facilities, materials and funding. These programs must be compared with current resources on hand to determine any shortfalls. After determination of need, CNET requests resources from program sponsors within OPNAV to support these approved plans and programs. Additionally, deficiencies in the existing resource base can be corrected by programming. Requests for resources

are included in CNET's POM submission to OPNAV. If approved, they become a part of the Navy's POM to the Secretary of Defense (SECDEF or OSD).

The POM process takes place in the spring months to coincide with budget submissions. Late submissions can be made by major claimants through October. Although the POM process is for future planning, many issues involve current programs with deficiencies severe enough to warrant CNO attention. The POM process is an iterative system often referred to as a five year "moving target". It includes data for two years past the current year (FY + 2) through six years past the current year (FY + 6). In each consecutive year, the previous FY + 2 year becomes the FY + 1 (budget year) and a new FY + 6 year is programmed. As NTP's or other tasks from sponsors are received, CNET outlines the resources that are required to meet these plans. If the OPNAV sponsors can verify that resources requested are realistic and accurately reflect directed plans and programs, they are considered for SECDEF programming. This step has been greatly enhanced by CPATS. The program and RMS information needed to generate accurate and timely responses is imbedded in CPATS and can be manipulated many different ways, depending on the request. A deficiency to be noted at this point, however, is the use of object class codes. Object class is a breakdown similar to expense element. The Navy has traditionally used expense element as its final classification level, while the remainder of the services under SECDEF use object class. The accounting for civilian labor can be used to illustrate the relationship between object classes and expense elements. Expense element U is used to account for all civilian labor under the current system. Within object class 11, which also corresponds to civilian labor, breakdowns include temporary labor, students, foreign nationals and other types of employees. These breakdowns can be coded in the third, fourth, fifth and sixth positions of a four or six digit code. [Ref. 4] The problem created is that, before CNET can submit a POM request to OPNAV, program data must be manually translated into object classes. Through the use of a six digit data field, formerly used for Program Element, Financial Systems personnel are coding object class information to "dove-tail" with the CPATS Dictionary. This enhancement will eventually lead to a replacement of expense elements with object class codes.

Once programs and plans are approved for implementation by CNET they are directed to CNET Program Managers for maintenance. Subordinate commands' participation in the POM process is currently through the submission of CPATS

Program Change Forms (CPCF's). The CPCF is the same as a CPCW except that, with its name change, the length was expanded eight fold. These are currently eight-page, hard copy forms, completed where appropriate by subordinate commands and mailed to CNET for determination. In the near future, the automated Program Change File (PCF) will be used as the on-line vehicle for transmitting the same information. When CPCF's are received from subordinate commands they are forwarded to the cognizant Program Manager for a determination. They can be supported, revised or not supported depending on approval status of the program from the POM or resource availability from sponsors. These responses to the CPCF's are returned to subordinate commands with the annual budget call to aid in preparation of budget submissions that are supportable and defensible. [Ref. 5]

3. Budgeting

The budgeting phase of PPBS takes place in the second quarter of the current fiscal year. When CNET requests budget submissions from subordinate commands, control figures are provided as parameters. These control figures are derived from the controls sent by OPNAV to CNET for use in the budget year. They represent programs and NTP's which were approved in the POM and used in the Five Year Defense Plan (FYDP). Subordinate commands submit budgets through the appropriate echelons for consolidation of a CNET budget submission. The initial CNET budget is reviewed, along with budgets of other major claimants, by CNO and NAVCOMPT to ensure accuracy and justifiable evidence. The combined Navy budget is then submitted to OSD for consolidation in the DOD budget. Finally, the Defense budget is reviewed by Office of Management and Budget (OMB). After review, the approved Defense budget submission is sent to Congress as part of the Presidential Budget request in January.

Prior to CPATS, Comptrollers and Fiscal Officers at subordinate commands would prepare their budgets in the RMS format. CNET would accumulate the data and present a comprehensive budget request to SECNAV. The drawback of this method was that resources requested by the budget could not be directly linked to the programs they were to support. The budget under CPATS is prepared for the coming year in program format. As commands submit budget inputs to CNET in the form of CPCF's, data are identified by programs in CPATS. The information serves a dual purpose. It provides details to support the Operation and Maintenance, Navy (OM&N) budget submission for CNET and it illustrates the extent to which programs

will be supported if the budget is approved. The actual budgeting process each year consists of requesting only changes to the previous year's budget. These requests are made by completing a CPCF for each adjustment required. [Ref. 5]

4. Execution

Resources requested in any of the three previous phases may or may not be provided for actual budget execution. In October, the congressionally approved resources for the new fiscal year are allocated to operational level commands via their major claimants. Within CPATS, these resources have been identified with specific programs and must be spent accordingly. Prior to CPATS, reprogramming of resources between AG/SAG's was a common practice for correcting deficiencies within a command. The result has been that "activities have traditionally done an inadequate job accounting for dollars and manhours to the correct Cost Account Codes." [Ref. 5: p.2-2] An inordinate amount of time has been spent in the past explaining these deviations from budget targets. Using CPATS, however, data are translated into program format for ease in monitoring the execution of approved programs and budgets. This enhancement allows Resource Sponsors to accurately determine resources needed to support their programs and serves as a defense for CNET when shortfalls exist for specific programs. In order to facilitate this monitoring activity, obligation data from the Authorized Accounting Activity (AAA) in the Uniform Management Report Format C (UMR-C) must be matched with CPATS Program Management Codes. This process was not feasible in the past, with 25 different AAA's being used by CNET activities. The answer lies in the consolidation of AAA services for all CNET activities to CNET headquarters which will be further explained in Chapter III.

A potential hazard that cannot be prevented by CPATS is the erroneous accounting for actual expenditures. Managers at the lowest levels must ensure that proper CAC's and EE's are used during the execution year to maintain data integrity and accurately record resources used in program execution. If resources are improperly recorded it becomes increasingly difficult to ascertain where they are being used. The result is potentially inaccurate programming and budgeting information. Since CNET Program Managers monitor execution in the current year, CPATS can also be used to generate many reports to answer inquiries that may come from CNO, OSD or Congress. [Ref. 5: p. 2-2]

III. HISTORY AND ORGANIZATIONAL DEVELOPMENT

A. CHRONOLOGY

1. Overview (Fiscal Years Prior to October 1984)

In early calendar year 1983, problems surrounding budgeting and fiscal systems within the CNET claimancy were recognized. A wide range of automated systems was used to collect and use information in the training community. The specific systems in use at the time were:

- 1) CABS - CNET Automated Budgeting System
- 2) CARS - CNET Automated Requirements (POM) System
- 3) CAMPRS - CNET Automated Manpower and Personnel Reporting System
- 4) CCCS - Cumulative Course Costing System
- 5) NITRAS - Navy Integrated Training and Resource Administration System
- 6) NTPMIS - Navy Training Plan Management Information System

These systems could not be used in concert and therefore caused duplication of effort in many cases.

A brief explanation of some terms and concepts is needed in order to understand the full impact of CPATS and its potential in the future.

The Chief of Naval Education and Training (CNET) is one of 13 major claimants (commands) within the Navy responsible for the management of resources allocated by OPNAV Resource Sponsors (program coordinators). These resources, including funding, manpower and equipment, are used in the execution of assigned programs--which, in CNET's case, are most of the Navy's formal school training mission. Each resource sponsor is responsible for providing a commensurate amount of resources to ensure completion of the requirements or tasking it has assigned to the claimants. In the past, tasking has outweighed funding and budget aggregation at all levels has caused individual sponsor identification to be lost. A common result of local spending not being linked with specific programs is that sponsor A's dollars were actually spent for sponsor B's program. Ideally, resources are executed through major claimant authority, sub-allocated to Functional/Echelon 3 commands, and further sub-allocated to operating budgets (OB's) and operating targets (OPTAR's). An example of this relationship is the successive downward allocation of resources from CNET to CNTT to COMNTC San Diego and finally to CO, NAVCRUITRACOM San Diego.

The current standard of cost breakdown for both budgeting and accounting at the time was Activity Group/Sub-Activity Group (AG/SAG). An activity group (AG) represents a major function identified by claimants or sub-claimants in their budget submissions and may be combined to form decision packages in the final budget. A sub-activity group (SAG) represents a finer breakdown of an AG. AG and SAG codes are not intended to identify a specific program element, although in some instances they may relate to a single program element. [Ref. 6] An example of this variability can be found within Recruit Training Command (RTC), San Diego. Included in Operating Target (OPTAR) for RTC, San Diego, are both Recruit Training and Apprentice Training Activity Groups. The AG and SAG for Recruit Training are identical. The SAG does not further reduce recruit training functions to more specific elements. Under the same command and OPTAR, however, is Apprentice Training with different AG's and SAG's. The AG represents specialized skill training which can be performed at either RTC or at Service Schools Command (SSC), and the SAG's represent different types of specialized skill training.

Resource sponsors track their programs by Program Elements (PE's). These PE's were not communicated through the RMS accounting process described above, and therefore any relationship between programs and actual costs recorded during budget execution was lost. For example, within AG (K2) Specialized Training, there are eleven SAG's grouped into three Program Elements. In the past, however, CNET accounting programs have tracked only the eleven individual SAG's within the (K2) AG. The fragmentation of cost breakdown structures within CNET made it very difficult for sponsors to understand and defend budgets. These information shortfalls made horizontal budget cuts, often encountered, damaging to all programs. Because resource sponsors and major claimants could not see specific programs in execution, budget cuts could not be made logically or even argued against in terms of program impact. From the initiation of the budget process, the Program Objective Memorandum (POM) process was not as effective as it could have been. In general, a comprehensive system was needed to track funds from POM submission, through the budget cycle and finally to execution.

On 28 June 1983, the Chief of Naval Education and Training established a task force of CNET personnel to "develop a consolidated ADP management plan that will effectively and efficiently support the CNET planning and financial management function." [Ref. 3: encl. 16] This tasking formalized the need for a "cradle-to-grave" tracking capability, from POM initiative through budget execution.

The proposed system to meet this requirement and consolidate existing systems was the CNET Program Automated Tracking System (CPATS). The system was, at this point, a six month study to review various ADP systems, CNET procedures and Navy/OSD POM/Budget requirements. [Ref. 3: encl. 16]

The first step was to communicate with program sponsors to determine exactly what programs they wanted to see and how specifically they wanted them defined. Some sponsors actively participated in this effort, and others allowed CNET to define programs which they then reviewed. After these guidelines were determined the next task was to match program codes to cost account codes (CAC's) already in existence. Cost account codes are established to classify transactions according to their purpose and identify uniformly the contents of management report requirements. [Ref. 6] CNET is given the authority to establish cost account codes by NAVCOMPT Manual Section 024640 which states, "The Chief of Naval Education and Training or his designated representative is responsible for the assignment of these cost account codes to applicable activities." [Ref. 6]

Actual implementation with direct involvement by subordinate activities began in FY84. The FY86 budget call [Ref. 3] was the first standard budget document to address CPATS. Under the section entitled "General Guidance", CNET explained that requirements for budget submission were similar to previous years, with the exception of CPATS, then referred to as the CNET Program Tracking Study. Data requirements, along with concepts and intents, were explained in two enclosures entitled, CPATS Program - O&MN Activity Report and CPATS Program - O&MN End Strength Report. These enclosures to the annual budget call summarized funding and manpower requirements for each cost account for the current year (FY84) and six outyears (FY85-FY90). When consolidated at the CNET level, this information was used to begin a system of program changes and one-time costs. These two factors are the tools used in CPATS for budgeting. Using a funding base of one year, program changes are indicated by an increase or decrease of some amount from that year's budget, by program element for one or more outyears. One-time costs are indicated by an increase of some amount in one year followed by a decrease of the same amount in the following year.

Functional commands and activities were directed by CNET to summarize their budget requests in formats provided by CNETNOTE 7110 [Ref. 3] and submit them by one of two methods. For those with mechanized capabilities, disks were sent

in the proper formats of the enclosures. The only commands having this mechanized capability at the time were the third echelon commands reporting directly to CNET, eg. CNTT. Commands at the operational level reporting via a third echelon command, for example, Naval Training Center (NTC), San Diego, did not have computer systems compatible with the WANG VS 100 at CNET. Commands at any level not having mechanized capability or compatible systems were directed to submit budgets in the standard hard copy format. Special instructions and formats were provided to those commands having compatible systems. However, the benefits were questionable because of the mix of automated and non-automated information. There was a certain amount of difficulty at the beginning with standardization of compiling and interpreting the data. Finally, however, all submissions were aggregated into CPATS formats.

With the CPATS data provided by the FY86 budget submission, CNET was able to outline initial resource requirements for:

- Operation and Maintenance, Navy funds (O&MN)
- Civilian Personnel End Strength for FY86 (probable)
- Military Personnel End Strength for FY86 (requested)

Future developments were communicated to all entities concerned with CPATS during this phase to interest nonfinancial managers and employees and promote the far-reaching uses of the system beyond the financial applications. Additional uses of the system in the future include the tracking of Military Construction (MILCON) projects, Technical Training Equipment (TTE), Training Devices and Facilities projects and work requests.

Later in 1984 CNET set control figures for FY85, the next execution year, and directed commands to spread those funds by cost account and expense element. Expense element (EE) codes are used to identify functional/subfunctional category (FC/SFC) codes by type of service or item. [Ref. 6] A summary of breakdowns is as follows:

- AG/SAG's provide information about major functions within a program and are broken down further into FC/SFC's.
- FC/SFC's contain information about specific functions common to commands and are broken down into CAC's.
- CAC's are designated by CNET to describe specific functions within a command and are broken down into EE's.

- EE's are common to all commands within the Resource Management System (RMS) of the Navy and provide the most specific description of a cost by type of material or service purchased.

Commands were reminded that the preparation of POM88, the next step in the budget process, was the immediate goal of the current effort under CPATS and that budget figures should be tailored accordingly. Specifically, CPATS Program Change Worksheets (CPCW) were required to document

- 1) New starts
- 2) Increases/decreases to course length
- 3) Changing instructional methods such as
 - a) Conversion from military to contract instruction and
 - b) Self-paced to group-paced instruction
- 4) Commercial Activities (C/A) studies involving military personnel
- 5) Approved Civilian Substitution (CIVSUB) positions (a program designed to substitute civilians for military personnel in non-critical positions)
- 6) One-time costs approved and validated by CNET, including equipment installation, special emphasis programs, etc.

A sample of the original one page CPCW is provided in Figure 3.1.

When the CPCW's were aggregated to the program level by CNET the results were compared to the Five Year Defense Plan (FYDP). Those requirements above the FYDP (POM88 and out) became POM88 issues. The worksheets were key in the POM process and, for this reason, specific guidance was needed to ensure that complete and accurate information was communicated up the chain of command. During 1984, however, guidance down the chain of command was sketchy and loosely controlled. This communication breakdown in the system in 1984 caused operational personnel to become frustrated and impatient with the CPATS implementation and its management. Even with the great strides made by those who developed and understood the system, implementation was a difficult and time consuming chore for those at the operational level. Having to prepare a regular budget submission, as well as a tailored and defensible budget under CPATS format, caused great resistance at the functional level. [Ref. 7]

2. Fiscal Year 1985 (October 1984 - September 1985)

In February 1985, CNET Notice 7110 was issued as guidance for the FY87 Navy Budget Submission. [Ref. 8] All aspects of this budget were the same as in the previous year except for outyear estimates. For example, the previous budget (FY86)

CPATS PROGRAM CHANGE WORKSHEET

CHANGE TITLE: _____ DOCUMENT #: _____

ACTIVITY: _____ PREV DOC #: _____

UIC'S ---] OB: _____ FYDP: _____ MANPOWER: _____

ORIGINATOR NAME: _____ AUTOVON: _____

FUNCTIONAL CDR: _____ RESOURCE SPONSOR: _____

COST CODE: _____ COST CODE DESCRIPTION: _____

CPATS PROGRAM CODE: _____ PROGRAM DESCRIPTION: _____

CNTECHTRA COG CODE: _____ AUTOVON: _____

REFERENCE(S): (INCLUDE NTP IF APPLICABLE)

DOLLARS (THOUSANDS)

FUNDING O * MN	SAG	E/E	FY86	FY87	FY88	FY89	FY90	FY91	FY92
OPN									
TTE									
MILCON									

WORKLOAD INDICATOR:

UNIT OF MEASURE: _____ QUANTITY: _____

MANPOWER CIVILPERS

SAG	TYPE	DIRECT REIMB	STAFF INST	FY86	FY87	FY88	FY89	FY90	FY91	FY92
	GM									
	GS									
	WG									

MILPERS

		STAFF INST							
	OFF								
	ENL								

Figure 3.1 CPATS Program Change Worksheet.

included outyear target figures for FY87-FY90. This information was used in the FYDP and POM processes at CNET. With the information provided in CPATS format in 1984 however, data in regard to years beyond the budget year (FY87) had already been included and did not require additional inputs. The usual inflation exhibit was still included in the FY87 submission, although inflation estimates had already been factored into CPATS changes submitted in the prior year. A restriction was imposed that prohibited reprogramming between AG's but allowed it for SAG's within a group. CNET directed submission by either mechanized or non-mechanized means to arrive by 3 June 1985.

In March 1985, CNTT released a message to all its subordinate commands announcing the upcoming release of control figures for the budget submission and explained that CPATS budget inputs were not being required for the current cycle. [Ref. 9] It is important to note that during FY85, CPATS implementation was suspended insofar as operational activities were concerned. There were no direct inputs required. At headquarters, however, CPATS was very much alive in the sense of a data base being developed. Later in March 1985, CNET issued a letter amplifying guidance provided in CNETNOTE 7110 of 8 February 1985. [Ref. 10] Included in the letter were the budget control figures from NAVCOMPT, as promised, and a reminder that reprogramming between AG's was not authorized. A listing of corresponding UIC's, OPNAV Resource Sponsors and SAG's was provided for verification. These relationships, along with CIVPERS end strength figures, served as building blocks for the CPATS data base. Response to this letter, including all exhibits, was required by 30 April 1985, just four weeks prior to budget submission. The impact at the operational level was great for approximately four weeks, but the regeneration of similar information ensured accuracy and continuity.

During this time (February-March), CNET sent copies of CPATS Program Change Worksheets back to their respective commands and indicated which were supported, revised or not supported. This information gave operational commanders more specific direction to follow in the FY87 budget and a better indication of which program changes would come to fruition.

Responses from operational commands to the CNTT letter of 20 March 1985, [Ref. 10] included a breakout of Local Management Codes (LMC's) by CA's and AG-SAG's. This information was consolidated with existing program data and compiled into a data base called the CPATS Cost Account Dictionary. Once

completed, this listing became the Master Dictionary for CPATS and could be cross referenced by any data field (column). The major change was that the Dictionary could relate RMS accounting data (AG, SAG, CAC) to program sponsors and program elements. An excerpt from the dictionary is provided in Appendix B. This was a major development in the implementation of CPATS and was a product of both headquarters and operational level efforts.

The next step in the evolution of CPATS was to collect obligation estimates for FY85 to be used as a requirements base for program changes in the future. The important goal in relation to obligations is to spend funds in the manner in which they were budgeted. Actual obligations are the best measure of how commands actually spend the funds they are given. Because figures were requested in June 1985, three quarters of actual obligations and one quarter of projected obligations were given. This tradeoff was necessary in order to have the data base operational by October 1985, the beginning of FY86. The request for this information was contained in a letter entitled "CNET Program Automated Tracking System (CPATS)/POM88 Development". [Ref. 11] As promised in 1984, CPATS was being used as a vehicle for the POM. Four enclosures were provided as formats to produce:

- 1) Program Change Worksheets
- 2) CPATS One-Time Cost Exhibits
- 3) CPATS Civilian Personnel Data Exhibits
- 4) CPATS Contracts Exhibits

The first enclosure, including a blank CPCW, provided detailed directions for each block to be completed and solicited inputs for FY86 through FY92. This illustration was far superior to the verbal guidance relied upon in the previous year. The one-time cost exhibits were presented for verification of those one-time costs submitted in the prior budget. Further, a CPCW had to be prepared for each one-time cost listed. The same was true for the CIVPERS data exhibits. The POM87 CIVSUBS were listed and commands were required to document each substitution in the CNET Automated Personnel Reporting System (CAMPRS) report and provide a CPCW to document the change in CPATS. Finally, a CPATS contracts exhibit was included and instructions were provided for completion. To aide in the submission of these crucial data, workshops were held on 31 July and 1 August. Key personnel in Comptroller Departments were required to attend.

It was at this stage that the metamorphosis of CPATS from a concept to a useful management tool became apparent to operational level personnel. Activity managers and Comptrollers were able to see the results of the program changes they had submitted in 1984 and those changes actually reflected in their budgets for FY86. The most highly sought after document in the coming year was the CPATS Users Manual. It was initially released in September 1985 but would subsequently be updated and released several times. The CPATS User's Manual [Ref. 1] provided operational level personnel detailed instructions on how to operate the system.

Information contained included:

- 1) Getting started and operating the system
- 2) Adjusting O&MN Dollar, Billet and Contract data
- 3) Printing reports on O&MN Dollar, Billet and Contract data
- 4) Using and printing validation tables
- 5) Samples of menus, data collection displays and reports
- 6) Generating comparison reports between validation files in CPATS and other systems
- 7) Generating and applying budget increments and decrements to the O&MN Dollar file summarized to the program level
- 8) Generating reports on adjustments made to the O&MN Dollar file summarized to the program level

It was the sum of all these efforts through FY85 that provided CPATS with a working base. The Users Manual points out, however, the the Initial Budget Call Module was only a first step in data collection. Another module was developed to assist CNET in the development of a comprehensive budget.

3. Fiscal Year 1986 (October 1985 - September 1986)

In early 1986, CNET Notice 7110 [Ref. 12] was issued to provide guidance for the FY88 Navy Budget Submission. Under the section entitled "General Guidance", CNET noted that requirements for the current budget submission had been greatly reduced due to the successful implementation of CPATS. The information submitted on the CPCF's was being used as the most current targets. Activities were reminded to review their CPATS data base and request any changes by submittal of the appropriate CPCF's. About two weeks after the original budget call from CNET, CNTT issued a letter forwarding CNETNOTE 7110 to its subordinate activities along with the most current CPCF's, indicating which ones were accepted, revised or not supported by CNET. [Ref. 13]

Almost the entire budget submission from the operational level was nothing more than a review and update of the CPATS data base. The financial emphasis was now on incremental budgeting, in the purest sense of changes from a base year. During the FY86 budget cycle, submittal of budgets from activities to CNTT was accomplished in less than four weeks compared with the FY84 budget cycle which took nearly three months.

A quantum leap during this period was the expansion of the CPATS staff from its original four to thirty personnel. This step came in April 1986 as a result of the reorganization of the CNET staff. Three activities within CNET along with some CNET staff positions were reorganized into the Naval Education and Training Program Management Support Activity (NETPMSA). Staffing and organization of the CPATS support group within NETPMSA was a good indication that CPATS development had a high priority and was successful in its initial implementation. There was increasing support for development of more applications and additional services in the future. A more detailed explanation of organizational changes is included in the next section.

4. Fiscal Year 1987 (October 1986 - Present)

With the apparent success of CPATS as a POM tool, greater emphasis was placed on gaining, justifying, and defending sufficient resources for the CNET claimancy and using them more effectively.

To this end, a significant revision to the O&MN dollar file (used in the POM) was made in the second quarter (FY87). This enhancement, currently being tested off-line, will enable the identification of current base, approved funding, approved unfundeds and total requirements at the CPATS program level for the budget and FYDP years. It is expected to be implemented in late FY87 in time for POM90 development.

A welcome change that took place with the beginning of FY87 was the final consolidation of Authorized Accounting Activities (AAA's) within CNET. Prior to 1970, CNET activities were coordinated through and received reports from 25 different AAA's. An objective of CNET since 1970, has been to consolidate all AAA functions from these 25 activities throughout the Navy to one central AAA at CNET in Pensacola. This initiative has spanned more than 15 years and will finally become a reality in October 1987. Although this change was directed years before CPATS was even an idea, the benefits of the two systems becoming operational at essentially the

same time, will be synergistic. [Ref. 4] This change will have the most profound effect on data integrity with respect to CPATS, because the execution data transmitted by activities via the Uniform Management Report Format C (UMR-C), a AAA report, will be distributed by CNET and therefore accessible through CPATS. This result is in fulfillment of CNET's original objective which was to provide more timely and accurate reporting of financial data. To coincide with their new AAA responsibilities, NETPMSA personnel merged the CPATS Dictionary with the IDAFMS system to create a year-to-date (YTD) cumulative obligations file. This file is actually an enhanced version of the old Cumulative Course Cost System (CCCS). It tracks the current year funded obligations, unfunded obligations and YTD obligations and lists them beside the two prior years obligations for the same segment. It can be sorted and broken down by OB-UIC, Chargeable UIC, AG, SAG, CAC, Type training, program, sponsor or any combination thereof.

Additional strides made in FY87 include the update of the Contracts file, testing of the MILCON information file and initial work on a Facilities information file to aid base commanders in their newfound responsibility of direct control over base support activities.

B. ORGANIZATIONAL DEVELOPMENT

In early 1983, when the task force was originally commissioned to study the feasibility of CPATS, it was comprised of personnel from different codes within CNET staff. Areas of expertise included ADP, budgeting, program management and manpower.

After CPATS was approved for implementation and set into motion, a group of four persons within the Comptroller Department at CNET was selected and given the responsibility for data gathering and coordination. As the effects and future uses of CPATS became apparent to both staff and subordinate commands, the workload began to snowball. The CPATS group went to great lengths trying to coordinate their efforts through others on staff and activities belonging to CNET, because no additional billets could be made available.

Finally, in FY85, CNET began a major staff reorganization and combined many functions and activities. In April 1986 three CNET activities were combined into one. These included the Naval Education and Training Financial Information Processing Center (NETFIPC), Naval Education and Training Program Development Center (NETPDC) and the Management Information and Instructional Systems Support

Activity (MIISA). The newly consolidated activity is the Naval Education and Training Program Management Support Activity (NETPMSA). Within NETPMSA are ADP support divisions, formerly MIISA; the financial information division, now acting as the AAA; and the CPATS division, coordinating present and future efforts with respect to CPATS.

Within the CPATS division there are five groups. The first, Manpower and Contract Systems, is concerned with military and civilian manpower requirements, as well as all contract and Commercial Activities (C/A) programs. The second group, Financial Systems, includes all dollar-type requirements along with the establishment and maintenance of program management codes and the cost account dictionary. The third group, Performance and Workload Systems, tracks performance of training functions, including support, manhours expended and input/output targets for student loading. The fourth group, Resource Analysis and PPBS Information, is responsible for the interface with the POM process and OPNAV Resource Sponsors. This group also polices data integrity. The fifth and final group, Statistical Analysis and Management Information, tracks performance trends, indicators and costs and determines report formats and frequency, depending on management needs.

Through the organizational development of program and financial reporting functions within CNET, the intended purpose of CPATS has been facilitated. That is, "to provide an automated and user friendly capability for recording, monitoring and tracking requirements and resources from programming (POM initiation) to budget execution within CNET." [Ref. 5: p. 1-2]

C. ADP REQUIREMENTS

The key element in CPATS can be found in the center of its acronym - automation. Its mission, through automation, is

the establishment of an ADP interface between existing and future requirements and resource data systems/files and development of integrating, sorting, and comparison software to enable managers to access, monitor and analyze requirements and resource data in compatible formats. [Ref. 5: p. 1-2]

In full development, CPATS will enable managers to compare their needs to the resources provided in order to determine shortfalls or redistribution strategies. Figure 3.2 represents a visual display of this concept by the comparison of needs (workload) to resources (supported levels) of manpower and funding.

CPATS GOAL

REPORTING UNIT: CPATS PROGRAM/CAC/UIC/AG/SAG/ETC

		PRIOR YEAR	CURRENT YEAR	BUDGET YEAR	B+1	B+2	B+3	B+4	B+5
<u>PRODUCTION REQUIREMENT</u>									
	REQT								
(ENROLLS/GRADS/AOB/FLT IRS/SF/ETC)	RESOURCED								
<u>MANPOWER REQUIREMENT</u>									
	REQT								
(MILPERS/CIVPERS/CONTRACT/ETC)	AUTHORIZED								
<u>FINANCIAL REQUIREMENT</u>									
	REQT								
(O&M,N/OPN/MPN/MILCON/TTE/ETC)	FUNDED								

NOTE: (1) CAPABILITY TO SORT AND DISPLAY DATA INDIVIDUALLY AND AT ALL LEVELS OF AGGREGATION.

(2) CAPABILITY TO COMPUTE AND DISPLAY DELTAS AND PERCENTAGES INDIVIDUALLY AND AT ALL LEVELS OF AGGREGATION.

Figure 3.2 CPATS Summary of Workload and Resources.

The implementation of CPATS began through the development of software to collect timely data and summarize them into useful budget information. This was accomplished through the original Budget Call Module. In order for this information to be compatible with future requirements a master dictionary was compiled, as explained in previous sections.

The system has been built at the cost account code (CAC) and expense element (EE) level. Because there are approximately 20,000 CAC's within CNET, each having three to five EE's, the master dictionary was the cornerstone for successful implementation. Programs within CPATS consist of several CAC's and numerous EE's. They are currently divided into 289 mission programs and 332 base operations programs. Mission programs are directly in support of the training mission, while base operations programs provide general services to mission entities. For example, mission programs include Recruit Training, Flight Training, Flight Deck Communications Systems and Surface Weapons Systems and base operations programs include Utilities, Legal, Civilian Personnel and Fire Protection. [Ref. 5: Appendix C] These programs are further broken down into individual Program Management Codes to correspond with RMS cost data. By using this finite level of aggregation, managers at the operational level as well as headquarters can access and utilize data, depending on many different needs. Use and management of these data are the responsibilities of various CNET Program Managers.

An ongoing concern of CPATS has been the consolidation of CAMPRS data into CPATS format. Originally, CPATS had a manpower module of its own. After careful study however, NETPMSA managers decided to modify existing files under CAMPRS to allow CPATS to be used for manpower issues in the POM process. This modification of CAMPRS included addition of data elements required to relate manpower to performance measurement and the identification of total requirements vice only authorized manpower. [Ref. 5: p. 1-3]

The major weakness of CPATS implementation from the operational perspective has been the hardware coordination. The process used currently to change and update information is manual and still involves submission of CPATS Program Change Forms (CPCF's), formerly referred to as CPCW's, in hard copy format. This process entails mailing and processing delays both up and down the chain of command. An automated Program Change File (PCF) is under development but cannot be implemented until all commands are on line with hardware. CNET currently has an

automated log of CPCF's which can be summarized, by OB-UIC or Chargeable UIC, into listings for subordinate commands to track the status of each and get an overall picture of their standing. The major enhancement resulting from implementation of the PCF will be the ability to submit and inquire about adjustments on-line thereby eliminating the manual process up and down the chain of command.

The hardware configuration currently in use is shown in Figure 3.3.

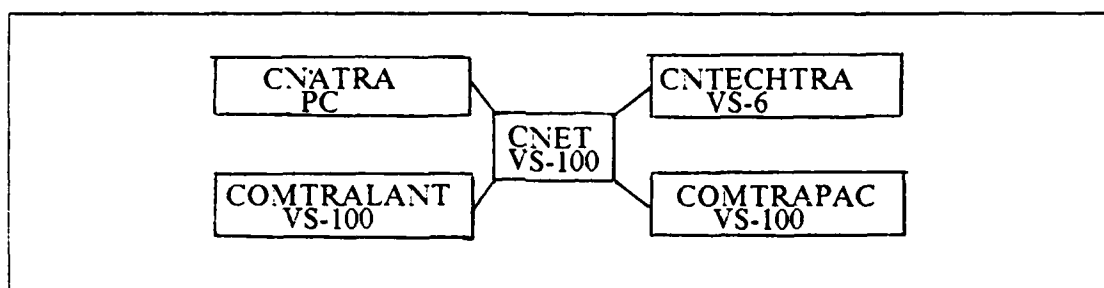


Figure 3.3 Hardware Configuration.

The VS-100 systems at Commander, Training Command U.S. Pacific Fleet (COMTRAPAC) and Commander, Training Command U.S. Atlantic Fleet (COMTRALANT) were in use before the advent of CPATS and have been compatible with only minor problems thus far. The personal computer (PC) at Chief of Naval Air Training (CNATRA) and the VS-6 at CNTECHTRA have been linked via telecommunications with with limited difficulty. The plan for the future is to place additional Wang VS type systems as funding allows and to augment the balance of Echelon 3 and 4 commands with remote (PC) terminals. [Ref. 14]

A Mission Element Need Statement (MENS) was prepared in August 1984 and outlined the following estimated costs.

Hardware Acquisition	\$ 325,000	to	375,000
Software Transition	\$ 560,000	to	600,000
Telecommunications	\$ 100,000	to	150,000
Developmental Misc. i.e. Maintenance, Supplies, etc.	\$ 75,000	to	100,000

Total Estimated Cost Range	\$1,060,000	to	1,225,000
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It is important to note that CPATS is not a confined system. CPATS is dynamic. As more applications and systems software is developed, new uses are explored. "As the mission and management emphases change within (CNET), CPATS must evolve and change to remain compatible with the management, programming, budgeting and execution process and requirements." [Ref. 5: p. 1-3]

IV. OBSERVATIONS AND FINDINGS--HEADQUARTERS

A. GENERAL CLIMATE

Prior to 1983, there was interest in developing a "cradle-to-grave" system of tracking resources within CNET. It was not until that time, however, that a CNET Chief had given it enough priority to establish a task force and investigate the possibilities. With his personal endorsement that the project was "a high priority item", Vice Admiral Sagerholm set a positive tone for the future of CPATS. [Ref. 15] From its inception, CNET staff personnel have been very determined and held to their convictions that CPATS would work. The attitudes have been nothing short of enthusiastic. The three primary goals discussed in Chapter II have remained at the center of all efforts and have provided the framework for more specific goals and objectives to be set.

Because the linking of program packages is a new concept of budgeting and execution, CNET has been scrutinized by NAVCOMPT throughout the implementation of CPATS. To this end, a Mission Element Need Statement (MENS) was prepared for submission to NAVCOMPT outlining the process and possible benefits offered by the implementation of CPATS. The MENS summarized CNET's motivation very clearly by the following assessment of need:

Various segments of the planning and budgeting processes are automated but exist independently, with each system entering and maintaining its own data. Any interfaces among the systems are manual interfaces requiring re-entry of data. A consolidation, integration, and enhancement of current systems and efforts is needed in order to provide CNET with program tracking capabilities. [Ref. 16]

B. SPECIFIC ISSUES

Throughout the design and implementation of CPATS some specific concerns have surfaced at the headquarters level. These include:

- CNET reorganization
- Software integration
- Hardware planning and acquisition
- Compatibility with other DOD systems
- Training
- Issuance of a CPATS directive

1. CNET Reorganization

In late 1983 and throughout 1984, enthusiasm was shared by everyone involved in the CPATS project. Plans for implementation and further integration of existing systems met with favorable response from within CNET, as well as NAVCOMPT and Program Sponsors. In 1985, however, the tone changed. News of the disestablishment of the Naval Material Command (NAVMAT) spread throughout the Navy, causing some concern by other major claimants about their future. Vice Admiral Sagerholm, then CNET, received word informally that CNET was also being considered for "reorganization". With this knowledge, he tasked an informal study group within CNET headquarters to compare the NAVMAT structure and the relationship to its systems commands (SYSCOMS) to CNET and its functional commands. The purpose of the study was to provide justification why CNET should not be disestablished. In comparison, the group found one major difference which later served as sufficient justification for CNET to continue operations. The SYSCOMS within NAVMAT had developed their own capabilities, including staff, to provide POM inputs and operate within the PPBS. The functional commands within CNET, however, had no such capability. CNET had always taken an active role in the PPBS arena, with inputs being provided by functional commands. As a result of these findings, CNET provided enough justification to remain in essentially the same form. A total cut/mark of 22 positions was directed by CNO and spawned the reorganization of CNET staff and the creation of NETPMSA. The impact on CNET's organizational climate during this period was great. All new initiatives, including CPATS, came to a halt and daily business was status quo. Many employees were seeking new positions elsewhere, and some actually left because of the undetermined future of CNET. This period of apprehension caused the stagnation of CPATS development throughout 1985 and explains the confusion by activities about its "on again - off again" implementation. [Ref. 17]

2. Software Integration

The main concern early in the process of implementation was how to integrate the existing software systems into one umbrella system called CPATS. The software support group, then at MIISA, was afforded the challenge of not only integrating six existing systems but also manipulating all the data to achieve a common denominator which related to programs, instead of just cost accounts and expense elements. These changes involved the development of new systems software as well as a whole new data

base of Program Management Codes. The Initial Budget Call Module was completed without much fanfare, but subsequent modules would prove to be more of a challenge. As discussed in Chapter III, CPATS originally included a manpower and personnel module to replace CAMPRS. Through careful analysis however, NETPMSA decided to keep CAMPRS and modify it to work within CPATS. This was not an easy task, considering that modification of a system in operation presents significant risks to users who depend on data integrity. In order to stay current, much of the data generated by the budgeting process had to be duplicated and entered into CAMPRS as if it were still a stand alone system. This duplication generated questions from field activities as to why they had to complete CAMPRS worksheets as well as planning for manpower in the CPATS change worksheets. Some applications of CPATS also required new data files. One example is the tracking of commercial contracts. With the increased use of contracts by CNET to accomplish its mission and the growing importance of the C/A Program, a contracts data file is essential. Overall, the software development with respect to CPATS has been successful. The systems and application programs are currently running off-line with only minor problems and meet the requirements as defined by NETPMSA. Other future applications include MILCON and training aids and equipment. [Ref. 18]

3. Hardware Planning and Acquisition

A related concern has been the planning and acquisition of hardware to support the use of CPATS at the operational level. The present hardware configuration shown in Table 1, was in place prior to CPATS development and used for various other applications. From the beginning of CPATS development, the proposed hardware to support the system has been WANG equipment. Some planning was done in terms of what type of equipment would be needed to run the system at the activities. For example, personal computers (PC's) were selected instead of simple data terminals so that the users could send, receive and calculate their own data. Additionally, printers were planned to accompany each PC to enable the users to generate hard copies of reports. The planning that was not done adequately, however, was hardware positioning. To date there does not exist a documented plan for hardware support. A contract was recently awarded, however, to purchase over \$900,000 of hardware from WANG. The following distribution is tentatively planned: [Ref. 19]

Number	Type	Destination
1	VS-85	CNTECHTRA
3	VS-85	Unresolved
52	PC	CNTECHTRA activities
19	PC	CNATRA activities
7	PC	TRAPAC activities
4	PC	TRALANT activities

All systems include printers.

The philosophy that currently exists with respect to hardware placement proposes a Customer Support Center concept to service CNET activities within a regional area. Hardware configurations at key regional locations would support all the information and reporting needs within that area. Each command would be linked with terminals to the Center system. The problem created by this lack of planning has been that functional commands and activities are unable to see how CPATS is going to benefit their operation. Even though the system is currently running off-line, many activities are pessimistic about the feasibility of such a system in the near future without written notification of hardware support coming their way. The answer to this problem is, of course, to publicize the proposed locations of hardware with a disclaimer explaining that changes may be required. The difficulty in this particular case is that, while negotiating the contract with WANG, NETPMSA personnel could not predict exactly how much and what type of equipment they were going to receive in a final settlement. [Ref. 18]

4. Compatibility With Other DOD Systems

A political issue that has caused problems with CPATS for CNET is the use of object class as the smallest element within DOD budgets. There has been a standing argument between the Department of the Navy and the Department of Defense over the use of object class. All other services in DOD use object class as their final breakdown of costs. The Navy, on the other hand, uses expense element as the lowest level. The result, as stated in Chapter II, is that CNET budgeting personnel must manually convert CPATS data when submitting the budget to OSD via NAVCOMPT and then convert back to expense elements when approved budgets are handed down. In the past year there has been increasing pressure from DOD to force the Navy to orient their financial systems toward the use of object classes instead of expense elements. The problem is that that object class coding requires up to six digits of data

while expense elements require only one. The CPATS group was resourceful enough to use the six digit data field formerly used for Program Element in RMS accounting to code the object class data. This is made possible because program data are already being generated by the CPATS program code and the PE data field was seldom used in the past. Financial analysts within The Financial Systems branch of NETPMSA have coded a magnetic tape to relate the object class data to the CPATS Dictionary. The result will eventually be that budget data entered in CPATS format will automatically generate the corresponding object classes for the budget submission to DOD. CNET will be at the forefront of all Navy activities in this effort to replace expense elements with object classes. [Ref. 4]

5. Training

A problem frequently mentioned at the activity level is the lack of training with reference to CPATS. This has been a problem of dissemination from the headquarters standpoint. CNET, from the beginning, and now specifically NETPMSA, have made a significant effort to provide updates and training about CPATS throughout its implementation. Visits were made annually to functional commands for the purpose of updating them on progress with CPATS and provide assistance with CPCF's. Most of the functional commands, because they had only a few subordinate activities, coordinated visits from key personnel within the activity Comptroller's offices to coincide with the CPATS training. These activities gained a great deal of knowledge about CPATS and were able to voice their opinions and ask questions. Because CNTECHTRA is the largest functional command in terms of the number of subordinate activities, coordination of the same type would have been difficult and expensive. The problem created as a result of this not being done was that the largest number of field activities within CNET were not well informed and were not given the opportunity to ask questions and voice their concerns in an open forum setting. A resulting problem for NETPMSA personnel has been a steady inflow of inquiries by phone about CPATS from CNTECHTRA activities. Because many of the questions and complaints are related to CNTECHTRA's involvement and redirection of action, callers are often referred back to CNTECHTRA. CNET personnel have recently directed CNTECHTRA personnel, informally, to answer all calls from their activities and not redirect them to NETPMSA. [Ref. 18]

6. Issuance of a CPATS Directive

A final concern of headquarters personnel has been the approval of a CPATS directive for promulgation to subordinate activities. Written guidance has been released in draft forms since MIISA issued its report in 1984 as a Users Manual. The primary reason it was not issued as a directive at any point during implementation was lack of authority. NETPMSA personnel did not feel that the information was developed enough for CNET to sign as policy, and the functional commanders were opposed to the Commanding Officer of NETPMSA directing any action on their part. The final decision was to wait until the software had been proven in testing and release the Users Manual in conjunction with hardware placement. This document has most recently been updated to include general information about the system and its applications and is being re-released as Volume I in a series of manuals related to CPATS and other management information within CNET. A secondary reason it was not issued as a standing directive prior to this time is that formats and applications continued to change at a fairly rapid rate. New developments have been integrated and information needs have changed. Since the bulk of the proposed directive contains the CPATS ADP Operations Manual, CNET faces no real urgency to release the document until hardware is staged. By that time, however, Volume I in its present form should be signed and distributed. [Ref. 18]

V. OBSERVATIONS AND FINDINGS--ACTIVITIES

A. GENERAL CLIMATE

The attitudes about CPATS from field level activities have been quite different from headquarters, as one might expect. The system is revolutionary in the sense that it changes the entire outlook on budgeting and fiscal management. The emphasis of program budgeting is on the outputs resulting from funded operations as opposed to traditional budgeting, based on inputs. This change in orientation has not been well communicated down the chain of command and has resulted in skepticism on the part of field level comptrollers. [Ref. 7] A certain amount of resistance and frustration can be expected with the implementation of any new system and is considered normal any time change is required. This does not mean, however, that these concerns are unfounded and do not deserve consideration.

The first time CPATS was introduced to subordinate activities was in the spring of 1984. [Ref. 3] CNET tasked the functional commands to work with their activities and validate the cost accounts intended for use in the CPATS Dictionary. Within CNTECHTRA this task was accomplished through site visits to common geographical areas. All CNTECHTRA commands in an area such as San Diego were directed to attend a one day workshop. CNTECHTRA personnel briefly explained the goal of CPATS and asked the commands to validate listings of the cost accounts they were using and delete any cost accounts not being used. During these visits many questions were asked and few answers could be given. No one at the CNTECHTRA level knew enough about CPATS to answer all the questions or enough about the future of CPATS to speculate about dates for implementation. [Ref. 20]

A continuous concern from the operational level commands has been the lack of information about CPATS and why it is needed. This is perhaps the greatest sore spot with any new system and could have been alleviated, at least in part, by an effective informational campaign during the early stages of implementation. It may seem contrary to normal operations within the Navy that a major claimant should "sell" a new program to subordinate commands; but, in this case, cooperation from informed users could have streamlined the process significantly and ensured data integrity through attention to detail.

B. SPECIFIC ISSUES

Some specific issues and concerns that have surfaced from the activity level during the implementation of CPATS include:

- Lack of training and communication
- Lack of documentation
- Complex and constantly changing CPCF's
- Management to Payroll

1. Lack of training and communication

In the case of NTC San Diego, questions and issues have been raised to the highest levels within CNTECHTRA and CNET. Responses to the issues were well informed but not as well communicated. One example can be found in the area of systems training. Since 1983, CNET has set and implemented a policy of providing annual conferences and training to keep functional commands informed of current developments related to CPATS. When CNTECHTRA budget personnel were asked why operational (Echelon 4) commands had not received similar training, the response was that functional commands or sub-claimants (Echelon 3) were the only ones to receive training directly from CNET. CNTECHTRA did not provide its subordinate commands any scheduled training but chose instead to provide updates through correspondence. [Ref. 20]

Although it is certainly within the CNTECHTRA's discretion to pass information down the chain of command as it sees fit, an open forum conference each year may have relieved some of the tension caused by frustration with the new system.

2. Lack of documentation

Another major problem, as seen from the user's point of view is the lack of documentation. To date there have been no implementing directives or standing policies and procedures with reference to CPATS. Reference 5 is the documentation and policy directive sought after, but it has yet to be approved in any form. The reason, as mentioned in previous chapters, is that it is continually being revised. The alternative to a standing directive has been to pass instructions and requirements as they are needed. The result has been that:

- Forms and format change from year to year.
- Current CPCF is four pages long with eight pages of instructions (vice the one page CPCW in Figure 3.1).
- Many instructions are passed via telephone and result in incorrect directions causing additional work.

The first documentation to be published was the *CPATS User's Manual*. [Ref. 1] This document was actually an operators guide for the operation of the Initial Budget Call Module but also contained some background on CPATS development. The next revision to the manual was prepared in early 1986, in draft form, to be a stand-alone directive issued by the Commanding Officer of NETPMSA. The functional commanders within CNET viewed the proposed document as direction and, therefore, requested that it be issued and signed by CNET. The result was that the current document [Ref. 5] was revised as Volume I in a new series of CNET financial directives. [Ref. 18] Over the past three years, the only other CPATS documentation with respect to information, guidance and history, was included in the FY86 budget call in 1984. [Ref. 3: encl. 16] Any other information received at the activity level has been hearsay. [Ref. 7]

3. Complex and constantly changing CPCF's

The issue of the CPCF's being too complex is most often used as the reason for wanting a standardized directive. During the early years of CPATS the CPCW was only one page and was intended as a temporary device for input. When CPATS is fully automated, the Program Change File (PCF) will be used to transmit data on-line between CNET and subordinate activities. This will eliminate the need for CPCF's. During the past three years, however, CPATS has had different applications and therefore required more individual information. The current four page worksheet is cumbersome and confusing to users. It includes a header page with general information and a justification for the funds requested. This is essentially the same as the one page CPCW. The second page is used for displaying O&MN dollars required and also solicits information about performance indicators (production units) by quantity and qualitative enhancement to be derived if funding is approved. These performance factors are difficult for budget personnel to understand and no standards have been issued by CNET to serve as guidelines for consistency of information. The third page is for requesting Other Procurement Navy (OPN) dollars and manpower. Both sections ask specific questions unique to the expertise of equipment specialists and manpower analysts. The fourth page is used to indicate the functional commander's and CNET's action on the request. In many cases the original intent of a request is masked by an outdated or inaccurate worksheet being submitted. For example, the activity might request funding in FY87 based on a CNTECHTRA directed change in a program or course. Because of changes in program start up dates

or changes in the priority of a MILCON project, the request has to be cancelled or modified. [Ref. 21] Erroneous and incomplete submissions also cause short fuse situations because of the need for verification. For example, a program code may be left out or the cost account does not agree with the Dictionary. [Ref. 21]

Although CNET views program budgeting as a management function that should go beyond the Comptroller's office, the information being gathered at the operational level is still the responsibility of the respective Comptroller. The extensive tasking and performance data requested in the CPCF is a function of training personnel and requires intensive research and collection of unfamiliar data by Comptroller personnel. This problem is a result of the program sponsor's involvement generating training requirements in the form of NTP's or program changes and Comptroller personnel relating only to financial segments of information.

Additionally, when changes are made to the CPCF's they are returned to subordinate activities in a different format than originally submitted, which is often unreadable and not explained well enough. They are coded with handwritten notes indicating approval, disapproval or revision. Many times there is not a sufficient explanation of why a request has been disapproved or revised. [Ref. 21] When unfunded requirements are returned and funded, yet another format is used. In some cases funding has been received that was not previously requested. [Ref. 22] Because it is essential that funds be expended as budgeted, lack of identification causes great concern. What has happened in these cases is that program sponsors have funded programs they want implemented and have consequently provided funding through CNET to operational commands. In the mean time, there has been a breakdown in communication between the program office and the field activities. The result has been a lot of manhours being expended trying to track down the intended uses for those funds provided. [Ref. 20]

4. Management to Payroll

An issue of great concern to everyone within DOD has been Management to Payroll. Under this new system of managing civilian employment and pay, each command has full discretion as to how many and at what grade level, within dollar parameters set by CNET, vice the old ceiling points approach. The reason this is a concern in reference to CPATS is that, theoretically, when implemented, Management to Payroll CIVPERS requirements should have been already available in the CPATS data base. The data were, in fact, there but not used to establish the initial CIVPERS

targets. The data used instead were on-board CIVPERS counts minus any expected retirements. [Ref. 20] The timing of these actions, in the first quarter FY87, caught many commands in transition with a lack of critical positions filled. Additionally, the CIVSUB program was just beginning to take effect and, consequently, military personnel were ordered out of commands and a great many civilian replacements had not yet been hired. An urgent request to CNTECHTRA by NTC San Diego brought partial relief in January 1987 but "CIVPERS funds in the amount of \$563K and an additional cap of \$494K" are still needed. [Ref. 23: p. 1]

This is a prime example of a critical information requirement that could have been met by the proper use of CPATS. The fact that CPATS was not used may be due in part to a reluctance to use the system because it is not yet on line. But if the data base is accurate, use of the manpower requirements in CPATS would have negated the need for augmentation requested in Reference 11.

VI. BENEFITS AND COSTS OF CPATS

Because CPATS is a new concept in program budgeting, CNET did not conduct a formal cost-benefit analysis before proceeding with its development. The costs of implementation have been considered to be within the scope of normal operations and, therefore, not specifically identified. Likewise, the benefits are classified as resulting from improved management information processing and are not tied directly to costs incurred by the emergence of CPATS. For these reasons it was difficult to quantify costs and benefits related to CPATS and its uses.

The method used here to assess costs and benefits was a review of each as CPATS was developed and implemented. The primary costs included work done by the initial task force, software development and hardware positioning. Benefits include reorganization savings, elimination of the need to maintain numerous systems, consolidation of all management information needs into one system and improved response time to program sponsors' inquiries. Additionally, the benefits gained from a more efficient interface with OPNAV program sponsors has netted CNET additional resources badly needed to support its mission.

A. COSTS

The first costs incurred relative to CPATS development were the manhours expended by the task force chartered to study the feasibility of such a system. Work was started on the project in July of 1983 and lasted approximately seven months. The team was comprised of nine members including the Chairman, a Navy Captain (0-6), one Lieutenant Commander (0-4) and seven civilians with an average grade level of GS-13. Supporting members were also appointed and consisted of three Commanders (0-5) and five civilians with an average grade level of GS-11. Additional personnel were tasked to brief the members on subject matter within their expertise. These persons were usually called only once and the information they provided was within the normal scope of their duties. For these reasons the cost of their manhours is excluded. In the first month there were five meetings conducted for the purpose of collecting and promulgating information about existing systems. In the six months following, members worked on the project in addition to their assigned duties. The degree of involvement varied, but the average time spent on the project and resulting costs are contained in Table 1. [Ref. 24]

TABLE 1
COSTS OF CPATS TASK FORCE

(1) Grade	(2) Annual Cost	(3) \$/hr	(4) #	(5) (3)X(4)	(6) Totals	(7) %Time spent	(8) (6)X(7)
Chairman							
0-6	68,545	\$32.95	1	\$32.95	\$ 32.95	100%	\$32.95
Members							
GS-14	70,015	33.66	1	33.66			
GS-13	59,253	28.49	3	85.47			
GS-12	49,830	23.96	1	23.96			
GS-11	41,575	19.99	2	39.98			
0-4	50,075	24.07	1	24.07	207.14	20%	41.43
Supporting Members							
0-5	60,974	29.31	3	87.93			
GS-12	49,830	23.96	1	23.96			
GS-11	41,575	19.99	3	59.97			
GS-9	34,363	16.52	1	16.52	188.38	5%	9.42
Aggregate Totals					<u>\$428.47</u>		<u>\$83.80</u>
5 meetings @ 2 hours each = 10 hours X \$428.47 = \$4,284.70							
1040 (AUG-FEB) aggregate manhours X \$83.80 = \$87,152.00							
Total Cost of Task Force					\$91,436.70		

The next costs in the development of CPATS were incurred by the team deployed to field activities during the period of 16 January 1984 to late March 1984. They were assigned the task of visiting twelve geographical areas for two purposes.

Approximately 60% of the travel was related to a continuing effort within CNET to maintain a cost account dictionary. The remaining 40% of the travel was attributed to CPATS development and orientation. The approximate costs of travel are based on three persons traveling for an average period of three days to each location. The average cost per person for transportation, per diem and miscellaneous expenses was \$455.00. Considering three persons on each trip to twelve locations, the total cost is 3 X 12 X \$455 = \$16,380.00. The 40% attributable to CPATS amounts to \$6552.00.

[Ref. 24]

The next step in CPATS development involved a transfer of CNET ADP support functions to MIISA. After this transfer was completed, MIISA personnel began work on the initial Budget Call Module, which work lasted approximately one year. The costs were outlined in Reference 2 and were expended within reasonable deviations from the estimates. Savings were realized through the consolidation and reconfiguration of ADP equipment in the amount of \$52,500.00. These cost savings were attributed to reduced rental charges as a result of equipment Life Cycle Management and purchase option credits being obtained. A cost of \$119,500.00 was incurred for contract support in order to free up 2.75 manyears for functional staff duties. The net cost, as a result, was approximately \$67,000.00. [Ref. 2: p. VI-6]

The final cost able to be quantified with respect to CPATS implementation is the \$900,000.00 for hardware, purchased under contract from WANG. [Ref. 18] The total quantifiable costs of initial CPATS development amount to \$1,064,988.70.

The costs not able to be quantified are those experienced by the subordinate commands during the implementation of CPATS. These costs vary to a great degree from command to command. In some cases, a particular task or issue is perceived by one activity to be a cost, while at another activity it is viewed as a savings or benefit. For example, a comparison was made between NTC San Diego and NTC Great Lakes as to the amount of overtime spent in the preparation of budgets without CPATS (1985) and with CPATS (1986). The results were that NTC San Diego spent 27 hours of overtime in 1985 as compared to only 10 hours in 1986. [Ref. 25] NTC Great Lakes, on the other hand, spent only 17 hours of overtime in 1985 compared to 61 hours in 1986. [Ref. 26] This disparity seems to indicate that costs and benefits in terms of efficiency at the activity level may depend mostly on the management strategies of the individual Comptrollers.

B. BENEFITS

The first benefit to be considered involves the CNET reorganization that resulted in the formation of NETPMSA. The majority of tasks and positions were reorganized from the three Echelon 3 activities which were combined in April 1986. Four positions, dedicated solely to CPATS, were transferred from CNET headquarters. Although these four positions were transferred specifically for CPATS, the concept of an umbrella system enabled CNET to combine the three activities into one with a common tool. The result was, that under one command, the three units could operate more efficiently, thereby reducing the total manpower requirements. The overall

savings as a result of the CNET reorganization was 22 positions. The average grade level being GS-12, annual savings of \$1,096,260.00 were realized. (49,830 X 22) [Ref. 24]

As a result of coding object class data into the CPATS dictionary, the time it takes CNET budget personnel to prepare the OP-34 budget exhibit to NAVCOMPT will be greatly reduced. Presently, the report is prepared four times a year and requires extensive statistical analysis and manual translation of data. This requirement is currently met by the dedication of one complete manyear of effort at the GS-12 level. Beginning in October 1987, annual savings of \$49,830.00 will be realized. [Ref. 24]

Another benefit of CPATS, felt both inside and outside CNET, is the improved management information and response time to program sponsor inquiries. This benefit can be broken down into two categories. The first is the annual submission of the Per Capita Cost of Training Report. This report is no longer required to be done at the activity level because the information is now available through CPATS. The data through CPATS are far more accurate because they tie directly to financial and training information systems as opposed to personnel at each activity "giving it their best guess". The report was typically done by a Navy Lieutenant, or equivalent, and took approximately 40 hours to complete. At an hourly rate of \$20.23, the total annual cost per activity was \$809.20. There are approximately 70 activities within CNET, resulting in an annual savings of \$56,644.00. The second category of savings is program sponsor inquiries answered at the headquarters level. These inquiries averaged 120 per year and took an average of 40 hours to prepare a reply. The average grade level involved was GS-9. Although these inquiries will continue at a slower rate, the time it takes to prepare a reply is greatly reduced. The program sponsors receive regular reports. However, additional inquiries average 60 per year and only take approximately two hours to reply. Therefore, the annual savings amount to $16.52/\text{hr} \times 468^{\wedge} \text{ hrs} = \$77,313.60$. [Ref. 18]

Total annual savings amount to \$1,280,047.60.

The benefits at the operational level have not yet been realized. At the present time, while data are generated manually to satisfy CPATS requirements, the intended savings in terms of manhours are not apparent. Although many budget exhibits have been eliminated and the size of the annual budget submission has been reduced, the cumulative manhours required to validate the system continuously throughout the year vary in degree depending on the activity. It is important to note, however, that when

CPATS is offered to commands as fully automated and interactive, manhour savings are expected to be significant. [Ref. 18]

C. COST-BENEFIT ANALYSIS

The costs of CPATS development and implementation were one-time costs and the benefits are expressed in terms of annual savings. Review of the data in previous sections supports the premise that benefits do, in fact, outweigh costs and the initial investment will be recovered in the first year of operation. Using the initial investment of \$1,064,988.70 divided by the annual savings of \$1,280,047.60, the payback period is 83% of a year or approximately ten months.

These results support the hypothesis that CPATS is, in fact, superior to past systems in terms of providing management information at reduced costs.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

The primary purpose of this research has been to conduct a comprehensive analysis of CPATS and determine its impact at the operational level. A secondary goal has been to evaluate its superiority, if any, to past systems in terms of resource savings and accuracy of information.

The approach used to attain these goals has involved a case study as well as a cost-benefit analysis. The chronological development and implementation of CPATS was reviewed, along with the organizational changes that took place within the CNET community. The concerns and issues raised during implementation were reviewed from both headquarters and activity levels. Finally, a cost-benefit analysis was conducted to investigate the resource expenditures and savings as a result of CPATS.

Although there was some communication breakdown among headquarters, functional commands and activities during the implementation of CPATS, CNET has been effective in achieving its goal of providing increased management information potential. Additionally, the cost-benefit analysis supports the hypothesis that CPATS is superior to past systems in terms of resource savings.

B. RECOMMENDATIONS

In response to the findings and conclusions outlined previously, the author recommends the following actions:

1. A directive needs to be issued as soon as possible to include history, information and goals related to CPATS and a standard, easy-to-use CPATS Program Change Form. The ADP Operations Manual could be left out until hardware is available to run the system.
2. Responses to the CPCF should be a part of the original form to aid in identification of the source and reason for funding. OPNAV program sponsors could utilize the same form for providing resources relating to new and modified programs.
3. With careful coordination through CNTECHTRA, CNET should use NTC San Diego as a test site for the Customer Service Center concept. It currently has a VS-100 in operation and it could be used to debug the system over time while waiting for hardware to be placed at other CNET activities.

APPENDIX A

GLOSSARY

AAA - Authorized Accounting Activity
ADP - Automated Data Processing
AG - Activity Group
AIS - Annual Inspection Summary
BOS -Base Operating Support
C/A - Commercial Activities
CABS - CNET Automated Budgeting System
CAC - Cost Account Code
CAMPRS - CNET Automated Manpower and Personnel Reporting System
CARS - CNET Automated Requirements (POM) System
CCCS - Cumulative Course Cost System
CIVPERS - Civilian Personnel
CIVSUB - Civilian Substitution
CNET - Chief of Naval Education and Training
CNO - Chief of Naval Operations
CNTT - Chief of Naval Technical Training
CPATS - CNET Program Automated Tracking System
CPCW - CPATS Program Change Worksheet
DOD - Department of Defense
EE - Expense Element
FC - Functional Code
FYDP - Five Year Defense Plan
IDAFMS - Integrated Disbursing and Accounting Financial Management
LMC - Local Management Code
MIISA - **Management** Information and Instructional Systems Activity
MILCON - Military Construction
MRP - Maintenance and Repair of Real Property
NAVCOMPT - Comptroller of the Navy
NETPMSA - Naval Education and Training Program Management Support
NITRAS - Navy Integrated Training and Resources Administration System
NTC - Naval Training Center

NTP - Navy Training Plan
NTPMIS - Navy Training Plan Management Information System
O&MN - Operations and Maintenance Navy
OB - Operating Budget
OMB - Office of Management and Budget
OPNAV - Office of the Chief of Naval Operations
OPTAR - Operating Target
OSD - Office of the Secretary of Defense
PCF - Program Change File
PE - Program Element
PGM - Program Management Code
POM - Program Objective Memorandum
PPBS - Planning, Programming and Budgeting System
System
SAG - Sub-activity Group
SECDEF - Secretary of Defense
SFC - Sub-functional Code
SOM - Simulator Operation and Maintenance
TPC - Training Program Code
TTE - Technical Training Equipment
UIC - Unit Identification Code
UMR-C - Uniform Management Report Format C

APPENDIX B SAMPLE OF CPATS MASTER DICTIONARY

PREPARED BY CNET 00C				AUTOYON 922-1596 RMS DICTIONARY			
UIC: 00247	DESCRIPTION: NTC SAN DIEGO						
SF	1	2	3	4	5	ACCT	DESCRIPTION
AQ	SAG	1	2	3	4	5	ACCT DESCRIPTION
K2	KK	A7					SGDE FFG COMM MAINT
K2	KK	A7					SGDF AN/SJR-QMT
M6	7T	F4					SGDF (DLR) AN/SQR-QMT
M6	GT	F4					SGDF (GPETE) AN/SQR-QMT
K2	KK	A7					SGDG AN/URT-23(C) RADIO TRAMS
M6	GT	F4					SGDG (GPETE) AN/URT-23(C) RADTR
K2	KK	A7					SGDN AN/URT-23RT

CHGUC	UIC	CIN	CDP	TRH	TYP	PROGRAM	PGM D
0551A	43392	A-101-0217	066H	C1	0940107	OTHER	
0581A	43392	A-101-0209	073F	C1	03 0602	LAMPS	
0581A	43392	A-101-0209	073F	C1	03 0602	LAMPS	
0581A	43392	A-101-0209	073F	C1	03 0602	LAMPS	
0581A	43392	A-101-0219	088B	C1	0940104	SHORE	
0581A	43392	A-101-0219	088B	C1	0940104	SHORE	
0581A	43392	A-101-0049	7306	C1	0940102	SHORE	

EXPLANATION
of DATA FIELDS in
RMS DICTIONARY

AG - Activity Group - K2 - Specialized Skill Training

SAG - Sub-Activity Group - KK - General Skill Progression

SF - Sub-Function - A7 - Secondary Apprentice

COSTACCT - Cost Account - 5GDG - See Description

CHGUIC - Chargeable UIC - 0581A - Service Schools Command, San Diego

STUDUIC - Student UIC - 43392 - Naval Station, San Diego
(Actual location of students in training)

CIN - Course Identification Number - A-101-0219 - High Frequency
Transmittor

CDP - Course Data Processing Code (Used by NITRAS) - 088B - High Frequency Transmittor

TRNTYP - Type Training - C1 - Primary Equipment Training

PROGRAM - CPATS Program Management Code - 0940104 - Command and Control
(OP-094) Shore High Frequency Systems (0104)*

* A listing of OP-094 Program Management Code data is attached.

Program Management Codes

CNET PROGRAM TRACKING SYSTEM (CPATS)

PROGRAM MANAGEMENT CODE DATA

FUND STATUS (FS) : / /

SPONSOR: OP-094

CNET N-4
PENSACOLA, FL.

RANGE IS -- ALL DATA

--PGM CODE--

CP PGM SUB ABBREV TITLE FULL TITLE

094	01	01	FLT DECK COMM	FLIGHT DECK COMMUNICATION SYSTEMS
094	01	02	SHIPBOARD HF SYS	SHIPBOARD HF SYSTEMS
094	01	03	SHIPBOARD SAT SYS	SHIPBOARD SATELLITE SYSTEMS
094	01	04	SHORE HF SYS	SHORE HF SYSTEMS
094	01	05	SHORE SAT SYS	SHORE SATELLITE SYSTEMS
094	01	06	COMM PR & REPR	COMMUNICATIONS PRINTERS & REPRODUCTION SYSTEMS
094	01	07	OTHER COMM SYS	OTHER COMMUNICATION SYSTEMS
094	02	01	CRYPT SYS	CRYPTOGRAPHIC SYSTEMS
094	03	01	SHIPBOARD IFF SYS	SHIPBOARD IFF SYSTEMS
094	04	01	SNAP MAINT	SNAP MAINTENANCE
094	05	01	TACINTEL COMP	TACINTEL COMPUTERS
094	89	02	PERSONAL EXCEL	PERSONAL EXCELLENCE

12. Chief of Naval Education and Training, CNETNOTE 7110, *Guidance for the Preparation of Supporting Detail for Fiscal Year 1988 Operation and Maintenance, Navy Budget Submission*, 26 February 1986.
13. Chief of Naval Technical Training, letter 7000 Ser N5A/02567, Subject: *Fiscal Year 1988 Operation and Maintenance, Navy Budget Submission*, 12 March 1986.
14. Telephone conversation between Mr. Jerry Clark, Code 5, Naval Education and Training Program Management Support Activity and the author, 22 January 1987.
15. Chief of Naval Education and Training, letter, Code 01, Subject: *POM Tracking and Headquarters Systems Integration Task Force*, 28 June 1983.
16. Chief of Naval Education and Training, *Mission Element Need Statement (MENS)*, 28 August 1984.
17. Telephone conversation between Mr. Bill Rayburn, Code 00B, Naval Education and Training Program Management Support Activity, and the author, 6 May 1987.
18. Interview between Mr. Jerry Clark, Code 00B2, Ms. Jackie Crumpler, Code 00B21, Mr. Don Parisi, Code 00B22, Naval Education and Training Program Management Support Activity, and the author, 15 April 1987.
19. Telephone conversation between Mr. Jerry Clark, Code 5, Naval Education and Training Program Management Support Activity, and the author, 23 April 1987.
20. Telephone conversation between Mr. Richard Tranas, Code N5, Chief of Naval Technical Training, Roger Takalo, Lieutenant Commander, Code 04, Naval Training Center, San Diego and the author, 13 February 1987.
21. Chief of Naval Technical Training, letter, Code N516, Subject: *CNET's Program Automated Tracking System (CPATS)*, 28 January 1987.
22. Chief of Naval Technical Training, letter, Code N71, Subject: *FY87 Unfunded Requirements/FY87 Tentative Annual Planning Estimate (TAPE)*, 28 January 1987.
23. Commander, Naval Training Center, San Diego, letter 7000 Ser 04/0191, Subject: *Critical Requirements for Additional CIVPERS and Support Funding*, 6 February 1987.
24. Telephone conversation between Mr. Bill Rayburn, Code 00B, Naval Education and Training Program Management Support Activity, and the author, 26 May 1987.

25. Interview between Roger Takalo, Lieutenant Commander, Naval Training Center, San Diego, Code 04, and the author, 14 May 1987.
26. Telephone conversation between R. Downey, Lieutenant Commander, Naval Training Center, Great Lakes, and the author, 18 May 1987.

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6. Commander, Naval Training Center Code 04 San Diego, CA 92133-5000	1
7. Commanding Officer, Naval Education and Training Program Management Support Activity Sausley Field, Building 2435 Pensacola, FL 32509-5000	1
8. Dr. James M. Fremgen, Code 54FM Naval Postgraduate School Monterey, CA 93943-5000	1
9. Dr. Roger D. Evered, Code 54EV Naval Postgraduate School Monterey, CA 93943-5000	1
10. Lieutenant Mary E. Williams Navy Tactical Interoperability Support Activity 200 Catalina Boulevard San Diego, CA 92147-5082	2

END

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